

## Advance Product Brief: Supereta™ Series – Single Output High Current Quarter Brick

### Supereta™ iQN Series DC/DC Quarter Brick 48V Input, 17V to 35V/6A DC Output



The Supereta™ iQN Series offers an industry standard quarter brick high current power module with true useable output power. The iQN series power modules with the voltage foldback constant current limit feature are ideally suited for fan motor control and wireless applications. Its 90% efficiency and superior thermal performance make the iQN Series of power modules ideally suited for tight space and power-hungry applications in demanding thermal environments. This rugged building block is designed to serve as the core of high reliability system. The droop current sharing capability allows multiple modules to be connected in parallel. A wide output voltage trim down range, to 17V, and remote sensing are standard features enhancing versatility.

#### Features

- Standard Quarter Brick Pinout
- Size: 2.28" × 1.45" × 0.5"
- Up to 6A of output current
- Power density – 127W / in<sup>3</sup>
- Maximum Efficiency – up to 92%
- Typical Efficiency: 90%
- Droop Load Share (0.771V/A)
- Voltage fold-back constant current limit
- Wide output voltage trim range 17-35V
- Insulated Metal Substrate design for high usable power – up to 210W
- Suitable for fan motor control
- Basic insulation – 1500Vdc
- Choice of remote on/off configuration
- Remote sense
- Constant switching frequency
- Latched output over-voltage protection
- Latched output over-current protection
- Latched over-temperature protection
- Auto-recovery input under and over voltage protections
- UL 60950 (US and Canada), VDE 0805, CB scheme (IEC950) Safety markings and CE Mark (EN60950)
- Optional 0.110", 0.180", 0.200" pin length
- Optional Non-latching OVP
- Optional Non-Latching OTP
- Optional Non-Latching OCP
- EMI: CISPR 22 A or B with external filter
- Multiple patents
- ISO9000 certified manufacturing facilities

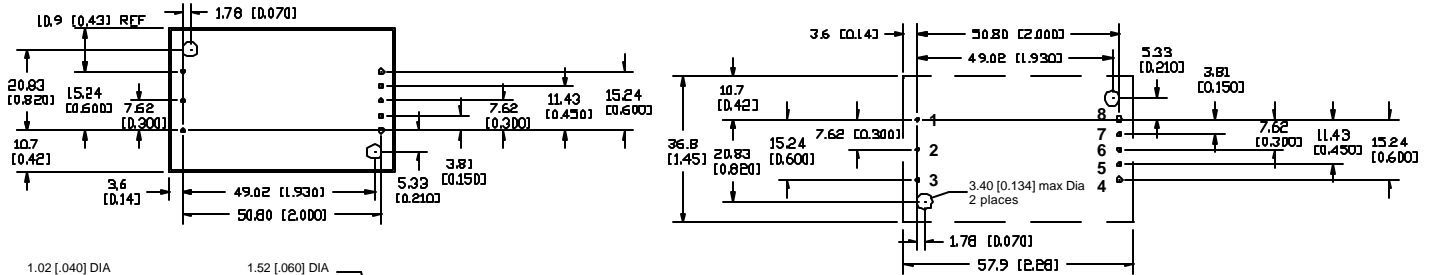
TDK Innoveta Base Product Code	Input Voltage	Output Voltage	Output Current	Typical Efficiency
iQN48006A350V	36-75V	35V	6A	90%

#### Typical Performance

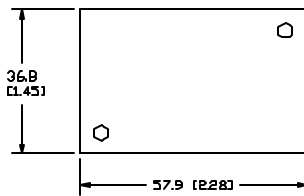
Input Characteristics		
Operating input range	36-75V	
Transient input voltage	100V	100mS max
Turn-on voltage	34.5V	
Turn-off voltage	32.3V	
Maximum input current	7 A	Input 0-75V, I <sub>o,max</sub>
Output Characteristics		
Open Circuit Voltage (I <sub>o</sub> =0A)	35 V	
Output Initial set-point accuracy	+/- 1.0%	V <sub>in</sub> =V <sub>in,nom</sub> , I <sub>o</sub> =0A, T <sub>c</sub> =operating range
Efficiency	90%	I <sub>o,max</sub>
Start-up time	120 mS	On/Off to 90% V <sub>out</sub>
Line regulation	+/- 0.1%	Over rated input
Droop Rate	771mV/A	
Load Share Accuracy	+/-10%	50% to 100% load
Output voltage trim range	17 to 35V	35V at no load
Trim equation	See full datasheet	
Output ripple	120 mVp-p 10 mVrms	20MHz bandwidth
Output current range	0 to 6A	With voltage droop
Current limit inception	6.5A	Voltage foldback
Output Load Capacitance	5000 uF (Max)	Min ESR > 3mΩ
Switching frequency	310 kHz	Fixed
Protection		
Output over-current	Constant Current	V <sub>o</sub> foldback
Output short circuit	Constant Current	Latching
Output over-voltage	113% of V <sub>out,oc</sub>	Latching
Thermal shutdown	120C	Latching
Environmental		
Operating temperature, T <sub>c</sub>	-40C to 119C	See full datasheet

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Dimensions are in mm [in]. Unless otherwise specified tolerances are:  $x.x \pm 0.5$  [0.02],  $x.xx \pm 0.25$  [0.010].



Recommended hole pattern (top view)



PIN	FUNCTION	PIN	FUNCTION
1	Vin (+)	4	Vo (-)
2	On/Off	5	Sense (-)
3	Vin (-)	6	Trim
		7	Sense (+)
		8	Vout (+)

## Ordering Information

Product Identifier	Package Size	Platform	Input Voltage	Output Current/Power	Output Units	Main Output Voltage	# of Outputs	Safety Class	Feature Set
i	Q	N	48	006	A	350	V	- 0	00
TDK Innoveta	Quarter-Brick	Supereta	36-75V	006 – 6A	Amps	350 – 35V	Single		00 – Standard

Feature Set	On/Off Logic	OVP	Pin Length
00	Positive	Latch	0.145"
01	Negative	Latch	0.145"
02	Positive	Latch	0.110"
03	Negative	Latch	0.110"
04	Positive	Latch	0.200"
05	Negative	Latch	0.200"
06	Positive	Non-Latch	0.145"
07	Negative	Non-Latch	0.145"
08	Positive	Latch	0.180"
09	Negative	Latch	0.180"

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